

IN THE CLAIMS

Cancel the existing claims 1-42 and add new claims 43-64 as follows:

43 (New). A cardiac electrical stimulation system having an autocapture stimulation/sensing configuration for use with atrial and ventricular leads, said cardiac electrical stimulation system including:

(a) at least two electrodes, at least one each being selected from at least two groups of electrodes consisting of atrial electrodes, ventricular electrodes, can electrodes and vena cava electrodes;

(b) a stimulation system enclosed in a housing, said stimulation system being electrically coupled to at least one atrial electrode and one ventricular electrode for providing an electrical stimulus to at least one of an atrium or ventricle of a heart;

(c) a sensing circuit that senses an evoked response by the heart to the electrical stimulus, wherein a signal associated with an evoked response from the electrical stimulus is sensed between at least two of said electrodes; and

(d) an afterpotential attenuation device for attenuating afterpotentials which result due to the application of the pacing stimulus to the heart by said electrical

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stimulation system, said afterpotential attenuation device being electrically coupled to said stimulation system.

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44 (New). A cardiac electrical stimulation system having an autocapture stimulation/sensing configuration for use with atrial and ventricular leads, said cardiac electrical stimulation system including:

- (a) at least two electrodes, at least one each being selected from at least two groups of electrodes consisting of atrial electrodes, ventricular electrodes, can electrodes and vena cava electrodes;
- (b) a stimulation means enclosed in a housing, said stimulation means being electrically coupled to at least one atrial electrode and one ventricular electrode for providing an electrical stimulus to at least one of an atrium or ventricle of a heart;
- (c) a sensing means that senses an evoked response by the heart to the electrical stimulus, wherein a signal associated with an evoked response from the electrical stimulus is sensed between at least two of said electrodes; and
- (d) an afterpotential attenuation means for attenuating afterpotentials which result due to the application of the pacing stimulus to the heart by said electrical

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stimulation means, said afterpotential attenuation device being electrically coupled to said stimulation means.

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45 (New). A cardiac electrical stimulation system as in claim 43 further comprising an atrial lead including at least one of an atrial tip electrode and an atrial ring electrode, and said ventricular lead includes at least one of a ventricular tip electrode, a ventricular superior vena cava electrode, a ventricular coil electrode, and a ventricular ring electrode.

46 (New). A cardiac electrical stimulation system as in claim 45 wherein the signal associated with the evoked response is sensed between the atrial tip electrode and the ventricular ring electrode.

47 (New). A cardiac electrical stimulation system as in claim 45 wherein the signal associated with the evoked response is sensed between the atrial ring electrode and the ventricular coil electrode.

48 (New). A cardiac electrical stimulation system as in claim 45 wherein the signal associated with the evoked response is sensed between the atrial ring electrode and the ventricular superior vena cava electrode.

49 (New). A cardiac electrical stimulation system as in claim 45 wherein the signal associated with the evoked response is sensed between the ventricular ring electrode and the

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ventricular coil electrode.

50 (New). A cardiac electrical stimulation system as in claim 45 wherein the signal associated with the evoked response is sensed between the ventricular ring electrode and the ventricular superior vena cava electrode.

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51 (New). A cardiac electrical stimulation system as in claim 45 wherein the signal associated with the evoked response is sensed between the atrial ring electrode and the ventricular tip electrode.

52 (New). A cardiac electrical stimulation system as in claim 45 wherein the electrical stimulus conducts electrically between the atrial tip electrode and the housing.

53 (New). A cardiac electrical stimulation system as in claim 45 wherein the electrical stimulus conducts electrically between the ventricular tip electrode and the housing.

54 (New). A cardiac electrical stimulation system as in claim 44 further comprising an atrial lead including at least one of an atrial tip electrode and an atrial ring electrode, and said ventricular lead including at least one of a ventricular tip electrode and a ventricular ring electrode.

55 (New). A cardiac electrical stimulation system as in claim 54 wherein the signal associated with the evoked response is sensed between the atrial tip electrode and one of said ventricular electrodes.

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56 (New). A cardiac electrical stimulation system as in claim 54 wherein the signal associated with the evoked response is sensed between the atrial ring electrode and one of said ventricular electrodes.

57 (New). A cardiac electrical stimulation system as in claim 54 wherein the electrical stimulus conducts electrically between the atrial tip electrode and the housing.

58 (New). A cardiac electrical stimulation system as in claim 54 wherein the electrical stimulus conducts electrically between the ventricular tip electrode and the housing.

59 (New). A cardiac electrical stimulation system as in claim 45 wherein the signal associated with the evoked response is sensed between one of atrial ring electrode to ventricular ring electrode, atrial ring electrode to can electrode, atrial ring electrode to ventricle coil electrode, atrial ring electrode to superior vena cava coil electrode, atrial tip electrode to ventricular coil electrode, atrial tip electrode to ventricular tip electrode, atrial tip electrode to atrial ring electrode, superior vena cava coil electrode to atrial tip electrode, superior vena cava coil electrode to ventricular coil electrode, superior vena cava coil electrode to ventricular tip electrode, ventricular tip electrode to ventricular coil electrode, superior vena cava coil electrode to ventricular ring electrode, and ventricular ring electrode to ventricular coil electrode.

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60 (New). A cardiac electrical stimulation system as in claim 43 wherein said an afterpotential attenuation device further comprises first and second coupling capacitors.

61 (New). A cardiac electrical stimulation system as in claim 60 wherein said first coupling capacitor is less than five microfarads and wherein said second coupling capacitor is greater than ten microfarads.

62 (New). A cardiac electrical stimulation system as in claim 44 wherein said an afterpotential attenuation means further comprises first and second coupling capacitors.

63 (New). A cardiac electrical stimulation system as in claim 62 wherein said first coupling capacitor is less than five microfarads and wherein said second coupling capacitor is greater than ten microfarads.

64 (New). A method of automatically determining whether an electrical stimulus evokes a response in the heart when the stimulus is applied by a cardiac electrical stimulation system having atrial and ventricular leads, a pulse generator, and a sensing circuit, said method comprising the steps of:

- (a) providing an electrical stimulus to at least one of an atrium or ventricle of a heart;
- (b) attenuating afterpotential associated with said electrical stimulus;
- (c) sensing an evoked response by the heart to the electrical stimulus, wherein a signal associated with

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an evoked response from the electrical stimulus is sensed between at least one of an atrial electrode and a ventricular electrode of said leads; and

(d) wherein said atrial lead includes at least one of an atrial tip electrode and an atrial ring electrode, and said ventricular lead includes at least one of a ventricular tip electrode, a ventricular superior vena cava electrode, a ventricular coil electrode, and a ventricular ring electrode.